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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,724	01/24/2002	Takeshi Ogasawara	020074	4228

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EXAMINER

WEINER, LAURA S

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 05/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/053,724	Applicant(s) OGASAWARA ET AL.	
	Examiner Laura S Weiner	Art Unit 1745	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 January 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4-5-02 and 7-9-02</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (6,083,642) in view of Watada et al. (JP 7-045282, abstract).

Kato et al. teaches a positive electrode material for alkaline storage batteries comprising nickel hydroxide particles and a cobalt oxide as a conductive agent. Kato et al. teaches in column 11, lines 50-65, that nickel hydroxide particles contain Co and Zn. Kato et al. teaches in column 6, line 66 to column 7, line 2, that the weight ratio of the higher cobalt oxide comprising gamma-cobalt oxyhydroxide to the nickel hydroxide particles is preferably with a range from 0.02-0.10. Kato et al. teaches in column 11, line 66 to column 12, line 5, that the positive electrode comprises 100 parts by weight of the solid solution nickel hydroxide particles and 7.0 parts by weight of the cobalt oxide was added together  $[7/107=6.54 \text{ wt\%}]$ . Kato et al. teaches in column 21, lines 1-10, that the particle diameter of cobalt hydroxide was 0.2  $\mu\text{m}$ . Kato et al. teaches in column 17, lines 46-60, that the counter electrode was a hydrogen storage alloy negative electrode. Kato et al. teaches in columns 21-22, Example 2, that the positive electrode material comprising the nickel hydroxide particles with cobalt and zinc was charged in an

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aqueous cobalt sulfate solution and an aqueous sodium hydroxide solution thereby obtaining  $\text{Co}(\text{OH})_2$ -coated nickel hydroxide particles. Kato et al. teaches in column 19, lines 1-5, that the higher cobalt oxide is a Na-type gamma-cobalt oxyhydroxide. Kato et al. teaches in column 20, lines 54, 67, that  $\text{M}(\text{CoO}_2)_3$  where M is K or Na that M/Co ranges from 0.20-0.33. Kato et al. teaches in column 30, lines 35-39, that a porous foamed nickel substrate was filled with the active material particles. Kato et al. teaches in column 30, lines 42-44, that the electrolyte comprised 40 g/l of lithium hydroxide in aqueous KOH solution and teaches in column 34, claim 18, that the electrolyte comprised an aqueous solution of KOH or NaOH.

Kato et al. discloses the claimed invention except for specifically teaching that the electrolyte solution contains potassium, lithium and sodium and does not teach that tungsten (W) powder and/or tungsten compound powder is added to the active material particles.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use potassium, lithium and sodium in the electrolyte of Kato et al. because it is prima facie obvious to combine compositions each of which is taught by prior art to be useful for the same purpose in order to form a third composition that is to be used for the very same purpose. See *In re Kerkhoven*, 205 USPQ 1069; *In re Susi*, 169 USPQ 423.

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Watada et al. teaches that it is known to include zinc, cadmium, cobalt, lead, copper, ruthenium, indium or tungsten to the nickel hydroxide active material. Watada et al. teaches that this provides a nickel electrode excellent in charging efficiency at the time of high temperature by preventing oxygen generation which is decomposition reaction of an electrolyte at charging time.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include tungsten in the nickel hydroxide positive electrode material of Kato et al. or to substitute tungsten in place of Co or Zn because Watada et al. teaches that W, Co, Zn can be included and teaches that this provides a nickel electrode excellent in charging efficiency at the time of high temperature by preventing oxygen generation which is decomposition reaction of an electrolyte at charging time.

4. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (6,083,642) in view of Watada et al. (JP 7-045282, abstract) and further in view of Tokuda et al. (JP 11-176432, abstract).

Kato et al. teaches a positive electrode material for alkaline storage batteries comprising nickel hydroxide particles and a cobalt oxide as a conductive agent. Kato et al. teaches in column 11, lines 50-65, that nickel hydroxide particles contain Co and Zn.

Kato et al. discloses the claimed invention except for specifically teaching that tungsten (W) powder and/or tungsten compound powder is added to the active material particles.

Watada et al. teaches that it is known to include zinc, cadmium, cobalt, lead, copper, ruthenium, indium or tungsten to the nickel hydroxide active material.

Kato et al. in view of Watada et al. discloses the claimed invention except for specifically teaching that yttrium powder or yttrium compound powder in addition to the tungsten (W) powder and/or tungsten compound powder is added to the active material particles.

Tokuda et al. teaches that it is known to include crystals of diyttrium trioxide ( $Y_2O_3$ ) and zirconium dioxide to the nickel hydroxide grain particles comprising metal cobalt and/or cobalt compound. As the solid solution grain, one with a ratio of swelling restricting element of 5-50 wt% is favorable. Tokuda et al. teaches that this provides a non-sintered nickel electrode for an alkaline storage battery of a high active material utilization factor when charged at room temperature and moreover with less reduction of the active material utilization factor when charged at high temperature.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include yttrium powder or yttrium compound powder in addition to the tungsten in the nickel hydroxide positive electrode material of Kato et al. because Tokuda et al. teaches that this provides a non-sintered nickel electrode for an alkaline storage battery of a high active material utilization factor when charged at room temperature and moreover with less reduction of the active material utilization factor when charged at high temperature.

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5. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (6,083,642) in view of Watada et al. (JP 7-045282, abstract) and further in view of Ogasawara al. (JP 2000-133302, abstract).

Kato et al. in view of Watada et al. discloses the claimed invention except for specifically teaching that the electrolyte solution contains 4-10 mol/l of KOH, 0.1-2 mol/l of LiOH and 0.2-4 mol/l of NaOH.

Ogasawara et al. teaches that it is known to have a battery comprising a negative electrode comprising a hydrogen storage alloy, a positive electrode comprising nickel hydroxide which has one or more of Zn, Y, Co, Yb, etc. and an electrolyte comprising an aqueous solution of 4-10 mol/l KOH, 0.2-1.0 mol/l LiOH and 0.2-2 mol/l of NaOH.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have an electrolyte comprising the claimed mol/l of LiOH, NaOH and KOH because Ogasawara et al. teaches that these ratios are known in the same battery system and since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

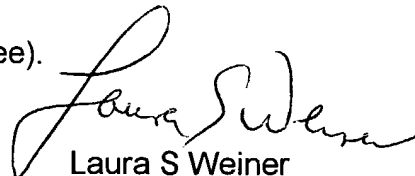
### ***Claim Objections***

6. Claim 1 is objected to because of the following informalities: The words "particles comprising nickel hydroxide to a conductive substrate" are too close together and need to be spaced apart. Appropriate correction is required.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura S Weiner whose telephone number is 571-272-1294. The examiner can normally be reached on M-F (6:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Laura S Weiner  
Primary Examiner  
Art Unit 1745

May 12, 2004